

259 Can Burkholderia Cepacia complex (BCC) be eradicated with nebulised Amiloride and Tobii?

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Introduction: BCC is a highly transmissible gram-negative organism with inherent resistance to multiple antibiotics, associated with greater virulence. Consequences of chronic infection include; accelerated decline in lung function and nutritional status, added burden of treatment, psychosocial issues linked to segregation and a reduction in quality of life. A group case study in adults [1] showed potential synergistic effects of nebulised Amiloride and Tobramycin for BCC eradication.

Aim: To investigate if this regimen could eradicate BCC infection in children with CF.

Method: Seven patients (5 female; mean age 15.2 yrs [range 12–16]; median duration of infection 14 mths [1–128]; 3 genomovar[gen]IIIA ET-12, 3 genII, 1 genIV), who cultured BCC, were prescribed preservative-free nebulised Amiloride (1.5 mg) followed by Tobii[®] (300 mg), twice daily via eFlowrapid[®] for 6 months. Adherence was assessed by parent log, prescription rate and used-bottle count.

Results: BCC was eradicated in only 1 patient (gen IV, culture +ve for 4 weeks prior to therapy, adherence 96.4%). During the course of the study there was no significant change in FEV₁ (p=0.11), mean change = -0.0086 L per wk, equivalent to mean annual decline of 28%. Two patients, both genII accounted for the majority of this decline. Median adherence by used-bottle count was 62.8% (mean=63.3%, range 6.9–96.4). 4 patients discontinued the study early between 3 and 4.5 mths due to haemoptysis or clinical deterioration.

Conclusion: Mean lung function remained stable although 4 subjects stopped the therapy early. In 6 children with chronic BCC genIIIA or II infection nebulised Amiloride and Tobii[®] did not eradicate these organisms. However, the child with a recent growth of genIV remains infection-free 14 months later.

Reference(s)

[1] Middleton PG et al ERJ 2005;26:305–308.

260 Efficacy of Bramitob[®] on eradication of Ps. aeruginosa (PA)

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Since 2007, tobramycin inhalations are available in Croatia. Here we report on first experiences with Bramitob[®] at our CF unit, University Hospital Center in Zagreb regarding PA colonization. In a 18-month period (Apr.07-Sept.08) 27 of our patients (48.2%) had PA isolation from sputa. They were treated with inhaled tobramycin 300 mg twice daily in 28 days on/off cycles until 2 consecutive PA negative cultures were obtained and were afterwards followed at least 6 months. Regarding microbiological results we divided patients in 3 outcome groups at the end of observation: **A** 10 patients (37%) remained chronically infected with PA; **B** 6 patients (22.2%) were recolonized within 6 months after a negative culture; **C** 11 patients (40.8%) had negative cultures for ≥6 months.

These groups differed at the beginning of treatment: **A** subjects with persistent PA colonization aged 8–25 yrs had initially ↑ count of polymorphonuclear lymphocytes (PMN) >25 in sputa and FEV₁ ranged 25.3–80.8%pred. In group **B** aged 12–21 yrs, the PMN count was 10≥25 and FEV₁ ranged 49.0–78.4%pred. In the best outcome group **C** subjects aged 2–18 yrs had PMN 0–25 and FEV₁ ranged 60≥80%pred. They had previously ≥3 positive PA cultures. Treatment was connected with a general decrease in PMN count and a mostly favorable effect on lung function in all groups, but with large variability in responses (N.S.). The primary outcome goal (PA eradication) was archived in younger subjects with low PMN count and a shorter PA colonization (C). For this up to 3 Bramitob[®] cycles were needed. Data from this small sample speak in favor of early treatment for PA and the importance of regular sputum controls. Patients with persistent/recurrent PA colonization (A, B) benefited mainly from decrease in PMN count.

261 TOBI 300 in Bulgarian cystic fibrosis patients

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Aim: To assess the drug tolerance and the influences on the Ps. Aeruginosa (PA) in sputum, lung functional parameters, body mass index (BMI) and the changes in the quality of life while using TOBI 300 in Bulgarian cystic fibrosis (CF) patients. **Methods:** A number of 42 CF patients among which 17 children (aged 6 y-18 y, 8 boys and 9 girls) and 25 adults (12M and 13F, aged 19 y-28 y) have received TOBI 300 through inhalation, twice daily for 4 weeks, followed by interrupting the treatment during the next 4 weeks. All CF patients were pancreatic insufficient and have received their common CF treatment. PA in their sputum had been established more than 3 times for the last two years and at the beginning of the TOBI treatment all patients did not show lung exacerbation evidences. Clinical status, lung functional tests (LFT), PA in sputum, BMI and quality assessment of CF life have been followed.

Results: With the exception of one 15 y boy, the clinical status of all CF has not shown need for hospitalization during the observation period (>4 months). PA in sputum has disappeared in 10 adult CF (40.0%) and in 11 CF children (64.7%). LFT's have shown improvement in about two thirds of the CF children (n=7) and in 28% of the adults (n=7). Appetite in most patients has improved, nevertheless significant changes in BMI have not been found. Better quality of CF life (answering positive on 7 or more questions from the questionnaire) has been found in more than 80% of the CF patients. Drug adverse effects have not been noticed in any of CF patients.

Conclusions: Treatment with TOBI 300 through inhalations twice daily has shown adequate therapeutic results in our CF patients and has been well tolerated.

262 Long term impact of azithromycin in paediatric cystic fibrosis patients

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Background: As inflammation plays a crucial role in cystic fibrosis (CF) pathogenesis, macrolides may be a valuable therapeutic strategy due to their well documented anti-inflammatory effects.

Aims: To evaluate the clinical and microbiological impact of azithromycin treatment in paediatric CF patients (pts) during the first year after its initiation, namely changes in FEV₁% predicted, body mass index (BMI) percentile, number of hospitalization and antibiotic treatment days, percentage of mucoid *P. aeruginosa* isolates and profile of adverse effects.

Methods: Retrospective review of paediatric CF pts who underwent azithromycin treatment for at least one year until the end of year 2008.

Results: Sixteen pts (8 female; mean age at azithromycin initiation 13 years 1 month) received azithromycin for a mean duration of 16.5 months. In the year preceding its initiation, 11 pts were chronically colonized with *P. aeruginosa*. FEV₁ 1% predicted comparison at azithromycin start and one year after revealed improvement in 6 pts and decrease in 5 pts. BMI percentile had an increase in 2 pts and 9 pts suffered no change. A decrease in the number of hospitalization and intravenous antibiotic days was seen in 7 pts and no change was observed in 7 pts during the first treatment year. Eleven pts had a decrease in the number of oral antibiotic treatment days. No significant change was seen in the percentage of mucoid *P. aeruginosa* isolates during the study period. No major adverse effects were observed.

Conclusions: In our study the major clinical benefits of azithromycin treatment were observed in the occurrence of pulmonary exacerbations requiring hospitalization and intravenous antibiotics as well as additional oral antibiotic courses.